

## SECTION II—REMARKS

Applicants thank the Examiner for a thorough review, and respectfully request reconsideration of the above referenced patent application for the following reasons:

### Claims 67-127 rejected under 35 U.S.C. § 101

The PTO rejected claims 67-127 under 35 U.S.C. § 101 stating that the claimed invention is directed toward non-statutory subject matter. In particular, the PTO states that **claim 82 recites a “carrier wave,”** which the PTO asserts “do[es] not fall into one of the statutory categories of 35 U.S.C. § 101,” thus rendering claim 82 and claims 67-127 unpatentable. Refer to the Office Action dated February 9, 2007 (“Office Action”), at page 2 ¶ 4.

Dependent claim 82 as amended herein recites:

The tree data structure of claim 67, wherein the machine readable storage medium comprises one of a memory device, ~~a carrier wave~~, an optical storage device, and a magnetic storage device.

Whether or not a “carrier wave” is unpatentable subject matter as the PTO asserts, Applicants have amended claim 82 so that it no longer recites “a carrier wave.” Thus, Applicants respectfully submit that dependent claim 82 as amended herein is in condition for allowance and Applicants furthermore respectfully submit that claims 67-127 are likewise in condition for allowance as their rejection was based upon the rejection of claim 82 amended herein.

Accordingly, Applications respectfully request the PTO withdraw its objection to claims 67-127 rejected under 35 U.S.C. § 101.

**Advisory of obligation under 37 C.F.R. § 1.56**

Applicants acknowledge the obligation under 37 C.F.R. § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the Examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a). Refer to the Office Action, at page 4 ¶ 5.

**Claims 67-79 and 81-127 rejected under 35 U.S.C. § 103(a)**

Claims 67-79 and 81-127 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Cormen et al., Introduction to Algorithms, ISBN: 0262031 318 (“Cormen”) in view of Sellis et al., The R+-Tree: A Dynamic Index For Multi-Dimensional Objects, Proceedings of the 13<sup>th</sup> VLDB Conference, Brighton 1987, pages 507-518 (“Sellis”).

With reference to independent claim 67 in particular, the PTO concedes that Cormen fails to disclose:

(1) **a range for the key**, (2) **a first value** to define a lower bound of the range for the key, and (3) **a second value** to define an upper bound of the range for the key, (ii) wherein the ranges of the plurality of sequential keys are non-overlapping.

Refer to the Office Action, at page 5, second to last paragraph citing to Applicants’ claim 67. The PTO asserts however, that Sellis discloses these limitations. Applications respectfully disagree and traverse the rejection.

The method disclosed by Sellis appears to disclose an object identifier, or a “key” for the sake of argument, having four values to describe a rectangle. In particular, Sellis describes the object identifier by stating that it “describe[s] **the bounds of data objects** ... [using] the form

(<sup>x</sup>low, <sup>x</sup>high, <sup>y</sup>low, <sup>y</sup>high) which represents the coordinates of the **lower-left and upper-right corner[s] of the rectangle.**” Refer to Sellis at page 511 right column.

Conversely, claim 67 of Applicants invention recites “each key comprises ... **a first value** to define a lower bound ... [and] a **second value** to define an upper bound.” In other words, Applicants recite in claim 67 “a **range** for the key,” whereas Sellis discloses “a **point in a 4-d space.**” Refer to Sellis, page 509 at ¶ 2.2.

Applicants respectfully submit that “a range for the key” is not the same thing as “a point in 4-d space.” The diagram of Sellis upon which the PTO relies clearly illustrates various rectangles depicting “point[s] in a 4-d space” as described by the surrounding text. Refer to Sellis, page 511 at Figure 3.4 and surrounding text. Sellis makes no mention whatsoever of “a **first value** to define a lower bound ... [and] a **second value** to define an upper bound.” To the contrary, Sellis discloses that its coordinates “represent[ ] ... the lower left and upper-right corner[s] of the rectangle.”

Because Sellis fails to cure the deficiencies of Cormen, Applicants respectfully submit that independent claim 67 as presented herein is in condition for allowance. Independent claims 83, 97, and 114 contain similar limitations to those of independent claim 67, and therefore are likewise in condition for allowance. Furthermore, dependent claims 68-79, 81-82, 84-96, 98-113, and 115-127 necessarily incorporate the limitations of the independent base claims upon which they depend, as well as adding limitations of their own, and therefore these dependent claims are also in condition for allowance.

Accordingly, Applicants respectfully request the PTO withdraw its rejection to claims 67-79 and 81-127 rejected under 35 U.S.C. § 103(a).

**Claim 80 rejected under 35 U.S.C. § 103(a)**

Claim 80 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Cormen in view of Sellis and further in view of US Patent Application Publication 2002/0181480 to Puleston ("Puleston").

Dependent claim 80 necessarily incorporates the limitations of the independent base claim upon which it depends, as well as adding limitations of its own, and therefore dependent claim 80 is also in condition for allowance.

## CONCLUSION

Given the above amendments and accompanying remarks, all claims pending in the application are in condition for allowance. If the undersigned attorney has overlooked subject matter in any of the cited references that is relevant to allowance of the claims, the Examiner is requested to specifically point out where such subject matter may be found. Further, if there are any informalities or questions that can be addressed via telephone, the Examiner is encouraged to contact the undersigned attorney at (503) 439-8778.


### Charge Deposit Account

Please charge our Deposit Account No. 02-2666 for any additional fee(s) that may be due in this matter, and please credit the same deposit account for any overpayment.

Respectfully submitted,

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